

8-7

**Skills Practice****Solving Quadratic Systems**

Find the exact solution(s) of each system of equations.

$$1. \begin{cases} y = x - 2 \\ y = x^2 - 2 \end{cases}$$

~~$$2. \begin{cases} y = x + 3 \\ y = 2x^2 \end{cases}$$~~

$$3. \begin{cases} y = 3x \\ x = y^2 \end{cases}$$

$$4. \begin{cases} y = x \\ x^2 + y^2 = 4 \end{cases}$$

~~$$5. \begin{cases} x = -5 \\ x^2 + y^2 = 25 \end{cases}$$~~

$$6. \begin{cases} y = 7 \\ x^2 + y^2 = 9 \end{cases}$$

~~$$7. \begin{cases} y = -2x + 2 \\ y^2 = 2x \end{cases}$$~~

~~$$8. \begin{cases} x - y + 1 = 0 \\ y^2 = 4x \end{cases}$$~~

~~$$9. \begin{cases} y = 2 - x \\ y = x^2 - 4x + 2 \end{cases}$$~~

$$10. \begin{cases} y = x - 1 \\ y = x^2 \end{cases}$$

~~$$11. \begin{cases} y = 3x^2 \\ y = -3x^2 \end{cases}$$~~

$$12. \begin{cases} y = x^2 + 1 \\ y = -x^2 + 3 \end{cases}$$

$$13. \begin{cases} y = 4x \\ 4x^2 + y^2 = 20 \end{cases}$$

~~$$14. \begin{cases} y = -1 \\ 4x^2 + y^2 = 1 \end{cases}$$~~

$$15. \begin{cases} 4x^2 + 9y^2 = 36 \\ x^2 - 9y^2 = 9 \end{cases}$$

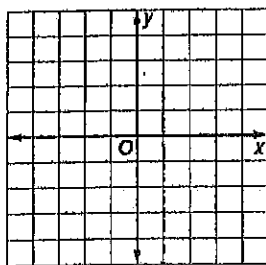
$$16. \begin{cases} 3(y + 2)^2 - 4(x - 3)^2 = 12 \\ y = -2x + 2 \end{cases}$$

~~$$17. \begin{cases} x^2 - 4y^2 = 4 \\ x^2 + y^2 = 4 \end{cases}$$~~

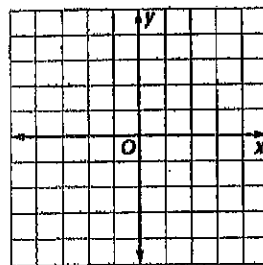
$$18. \begin{cases} y^2 - 4x^2 = 4 \\ y = 2x \end{cases}$$

Solve each system of inequalities by graphing.

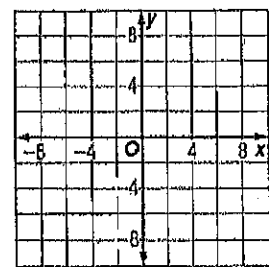
$$19. \begin{cases} y \leq 3x - 2 \\ x^2 + y^2 < 16 \end{cases}$$



$$20. \begin{cases} y \leq x \\ y \geq -2x^2 + 4 \end{cases}$$



$$21. \begin{cases} 4y^2 + 9x^2 < 144 \\ x^2 + 8y^2 < 16 \end{cases}$$



22. **GARDENING** An elliptical garden bed has a path from point A to point B. If the bed can be modeled by the equation  $x^2 + 3y^2 = 12$  and the path can be modeled by the line  $y = -\frac{1}{3}x$ , what are the coordinates of points A and B?

